

IN THE CLAIMS

1-59 (Canceled)

60. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule that encodes a protein ~~selected from the group consisting of~~ comprising an amino acid sequence of ~~SEQ-ID NO:2, SEQ-ID NO:5, SEQ-ID NO:8, SEQ-ID NO:11, SEQ-ID NO:14, SEQ-ID NO:19, SEQ-ID NO:25, SEQ-ID NO:31, SEQ-ID NO:37, SEQ-ID NO:39, SEQ-ID NO:40, SEQ-ID NO:41, SEQ-ID NO:42, SEQ-ID NO:43, SEQ-ID NO:44, SEQ-ID NO:53, SEQ-ID NO:54, SEQ-ID NO:55, SEQ-ID NO:58, SEQ-ID NO:68, SEQ-ID NO:73, SEQ-ID NO:74~~ and proteins that are at least 95% identical to ~~any of said sequence~~ sequences, wherein said protein exhibits carboxylesterase activity; and

(b) an isolated nucleic acid molecule fully complementary to a nucleic acid molecule of (a).

61. (Currently amended) The nucleic acid molecule of Claim 60, wherein said nucleic acid molecule encodes a protein comprising an amino acid sequence ~~selected from the group consisting of~~ SEQ-ID NO:2, SEQ-ID NO:5, ~~SEQ-ID NO:8, SEQ-ID NO:11, SEQ-ID NO:14, SEQ-ID NO:19, SEQ-ID NO:25, SEQ-ID NO:31, SEQ-ID NO:37, SEQ-ID NO:39, SEQ-ID NO:40, SEQ-ID NO:41, SEQ-ID NO:42, SEQ-ID NO:43, SEQ-ID NO:44, SEQ-ID NO:53, SEQ-ID NO:54, SEQ-ID NO:55, SEQ-ID NO:58, SEQ-ID NO:68, SEQ-ID NO:73, and~~ SEQ-ID NO:74.

62. (Currently amended) The nucleic acid molecule of Claim 60, wherein said nucleic acid molecule is ~~selected from the group consisting of~~ SEQ-ID NO:1, SEQ-ID NO:3, SEQ-ID NO:4, SEQ-ID NO:6, SEQ-ID NO:7, SEQ-ID NO:9, SEQ-ID NO:10, SEQ-ID NO:12, SEQ-ID NO:13, SEQ-ID NO:15, SEQ-ID NO:16, SEQ-ID NO:17, SEQ-ID NO:18, SEQ-ID NO:20, SEQ-ID NO:21, SEQ-

~~ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:51, SEQ ID NO:52, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:61, SEQ ID NO:67, SEQ ID NO:69, SEQ ID NO:70, SEQ ID NO:71, and~~ comprises SEQ ID NO:72.

63. (Previously presented) A recombinant molecule comprising a nucleic acid molecule as set forth in Claim 60 operatively linked to a transcription control sequence.

64. (Previously presented) A recombinant virus comprising a nucleic acid molecule as set forth in Claim 60.

65. (Previously presented) A recombinant cell comprising a nucleic acid molecule as set forth in Claim 60.

Please cancel claims 66-68, without prejudice or disclaimer of the subject matter thereof.

69. (Currently amended) An isolated protein comprising an amino acid sequence selected from the group consisting of ~~SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:8, SEQ ID NO:11, SEQ ID NO:14, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:31, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, SEQ ID NO:43, SEQ ID NO:44, SEQ ID NO:53, SEQ ID NO:54, SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:68, SEQ ID NO:73, SEQ ID NO:74~~ and an amino acid sequence 95% identical to any of said amino acid sequence sequences, wherein said isolated protein has carboxylesterase activity.

70. (Previously presented) The protein of Claim 69, wherein said protein, when administered to an animal, elicits an immune response against a carboxylesterase protein.

71. (Currently amended) The protein of Claim 69, wherein said protein is encoded by a nucleic acid molecule selected from the group consisting of: comprising ~~SEQ ID NO:1, SEQ~~

1D NO:4, SEQ ID NO:7, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:51, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:67, SEQ ID NO:70, and SEQ ID NO:72.

72. (Currently amended) The protein of Claim 69, wherein said protein comprises an amino acid sequence selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:8, SEQ ID NO:11, SEQ ID NO:14, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:31, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, SEQ ID NO:43, SEQ ID NO:44, SEQ ID NO:53, SEQ ID NO:54, SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:68, SEQ ID NO:73, and SEQ ID NO:74.

Please cancel claims 73-75, without prejudice or disclaimer of the subject matter thereof.

76. (Previously presented) A test kit to identify a compound capable of inhibiting flea carboxylesterase activity, said test kit comprising an isolated flea carboxylesterase protein of Claim 69 having esterase activity and a means for determining the extent of inhibition of said activity in the presence of a putative inhibitory compound.

77. (Currently amended) The test kit of Claim 76, wherein said protein comprises an amino acid sequence selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:8, SEQ ID NO:11, SEQ ID NO:14, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:31, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, SEQ ID NO:43, SEQ ID NO:44, SEQ ID NO:53, SEQ ID NO:54, SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:68, SEQ ID NO:73, and SEQ ID NO:74.

78. (Currently amended) The test kit of Claim 76, wherein said nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID

~~NO:4, SEQ ID NO:7, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:18, SEQ ID~~
~~NO:21, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:30, SEQ~~
~~ID NO:33, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:51, SEQ ID NO:57, SEQ ID NO:60,~~
~~SEQ ID NO:67, SEQ ID NO:70, and SEQ ID NO:72.~~